

IN THE UNITED STATES DISTRICT COURT
FOR THE MIDDLE DISTRICT OF NORTH CAROLINA

UNITED STATES OF AMERICA,)	
)	
Plaintiff,)	
)	
ENVIRONMENTAL DEFENSE,)	
NORTH CAROLINA SIERRA CLUB,)	
and NORTH CAROLINA PUBLIC)	
INTEREST RESEARCH GROUP,)	
)	
Plaintiff-Intervenors,)	
)	
v.)	1:00CV1262
)	
DUKE ENERGY CORPORATION,)	
)	
Defendant.)	

MEMORANDUM OPINION AND ORDER

OSTEEN, JR., District Judge

Presently pending and ripe for ruling are Defendant's Motions in Limine (Docs. 421, 422, 423, 424); Defendant's Motion for Summary Judgment (Doc. 432); and Plaintiff's Motion for Summary Judgment (Doc. 434). For the reasons set forth in this Memorandum Opinion and Order, Defendant's Motions in Limine (Docs. 421, 422, 423, 424) will be granted in part and denied in part. Relatedly, Defendant's Motion for Summary Judgment (Doc. 432) will be denied. Plaintiff's Motion for Summary Judgment (Doc. 434) remains under advisement and will be addressed by a separate opinion and order to be issued subsequently.

I. BACKGROUND

This case is a civil action brought against Duke Energy ("Duke") by the United States "pursuant to Sections 113(b) and 167 of the Clean Air Act ["CAA"], 42 U.S.C. § 7413(b)(2) and 7477, for injunctive relief and the assessment of civil penalties for violations of the Prevention of Significant Deterioration ("PSD") provisions of the Act, 42 U.S.C. §§ 7470-7492." (Complaint (Doc. 1) ¶ 1.) In this suit, the Government claims that Duke made modifications to its "coal-fired electrical generating plants" without obtaining permits, in violation of the PSD provisions of the CAA. United States v. Duke Energy Corp. ("Duke IV"), No. 1:00CV1262, 2010 WL 3023517, at *1 (M.D.N.C. July 28, 2010); see id. at *5 ("The Court follows . . . the holding and supporting rationale of Duke III, which makes clear that the plain language of the regulations requires a utility to obtain a pre-construction permit when proposed changes 'would increase the actual annual emission of a pollutant above the actual average for the two prior years.'" (quoting Env'tl. Def. v. Duke Energy Corp. ("Duke III"), 549 U.S. 561, 570 (2007)). Only thirteen of Duke's units, all of which were located in North Carolina, kept in Extended Cold Shutdown ("ECS"), and subject to Duke's Plant Modernization Program ("PMP"), are still at issue in this suit.

The parties agree that this case is governed by the 1980 PSD regulations¹, 40 C.F.R. § 51.24(b) (1981)², as adopted by North Carolina and incorporated into North Carolina's State Implementation Plan ("SIP"). (Pl.'s Consol. Opp'n to Duke Energy's Mots. in Limine ("Pl.'s Opp'n Br.") (Doc. 436) at 30

¹ In light of the Supreme Court's decision in Duke III, this court has opted to examine the PSD regulations regarding major modifications separately from those regarding new source regulations. The parties both cite case law and EPA determinations that evaluate whether a shutdown was temporary or permanent under CAA's reactivation policy and therefore whether the source is a new source for PSD purposes. See Cmtys. for a Better Env't v. Cenco Ref. Co., 179 F. Supp. 2d 1128, 1143-44 (C.D. Cal. 2001) (concluding that a unit that was modified after "six years of non-operation" should be compared to a "zero baseline" and explaining that "for a long-dormant facility (at least those shutdown for two years or more), the emissions baseline for determining whether it has undergone an emissions increase subject to NSR will be zero"); EPA Mem., Applicability of PSD to Watertown Power Plant, South Dakota (Nov. 19, 1991), <http://www.epa.gov/ttn/nsr/gen/memo-h.html> (finding that, although a plant had been in deactivated status for nine years and its operating permits had expired, the utility had overcome the presumption that a shutdown was permanent in this "unique situation" when the plant's owners had also maintained the plant to ensure it would be ready for reactivation and had stated in various reports that they intended to reactivate it); EPA, Interpretation of Offset Policy (Sept. 15, 1977), at 1-2, http://www.epa.gov/NSR/ttnnsr01/naas1/sun23_6.html (explaining that a plant that had been shut down for one year because of economic problems and would be reopened after a change in ownership was not a new source and, since a "change in ownership of a source does not constitute a modification," it was also not a modified source).

² These PSD regulations setting forth the minimum requirements for EPA-approved state PSD programs were later renumbered at 40 C.F.R. § 51.166. See 51 Fed. Reg. 40661 (Nov. 7, 1986).

n.25 (citing Jan. 31, 2003 Duke Summary Judgment Brief (Doc. 129 at 30))³; see 15A N.C. Admin. Code 2D.0531. Under these regulations, PSD review is limited to "major" modifications - "any physical change in or change in the method of operation of a major statutory source that would result in a significant net emissions increase of any pollutant subject to regulation under the [CAA]." Duke IV, 2010 WL 3023517, at *2 (citing 40 C.F.R. § 51.166(b)(2)(i)). According to the Duke IV opinion, "to trigger [the] PSD permitting requirement, there must be (1) a 'physical change' and (2) a 'significant net emissions increase.'" Duke IV, 2010 WL 3023517, at *2 (citing Duke III, 549 U.S. at 578). Because it is necessary for a utility such as Duke "to make a pre-project projection of what actual emissions will be before construction begins," an "actual-to-projected-actual test will be used to determine whether Duke Energy should have sought a pre-project permit for any of the projects at issue." Id. at *18. "[T]he regulations do not require the company to be prescient, rather they require a utility to undertake a reasonable estimate of what post-project emissions would be." Id. at *6.

³ All citations in this Memorandum Opinion and Order to documents filed with the court refer to the page numbers located at the bottom right-hand corner of the documents as they appear on CM/ECF.

In its motions in limine, Duke moves to exclude the testimony of the Government's expert witnesses⁴ based on Federal Rules of Evidence 402 (Relevance), 702 (Expert Witnesses), and Daubert v. Merrell Dow Pharm., Inc., 509 U.S. 579 (1993). Additionally, Duke moves for summary judgment or, in the alternative, for partial summary judgment on the six PMP units where either the GADS or PROMOD methodologies at issue projected no significant net emissions increase. (Doc. 432.) The Government also moves for summary judgment. (Doc. 434.)

Recognizing that the issue is whether Duke reasonably should have projected a significant increase in emissions caused by its PMP, this court reviews the undisputed facts in this case. The undisputed historical facts are generally set forth in the original summary judgment opinion, United States v. Duke Energy Corp. ("Duke I"), 278 F. Supp. 2d 619 (M.D.N.C. 2003), and those facts are incorporated by reference here. Id. at 622-25.⁵ The one exception to the incorporation is that, as noted earlier, only thirteen of the original plants are still at issue in this case.

⁴ These experts are Ranajit Sahu, Robert Koppe, Bruce Biewald, and Philip Hayet. (See Docs. 421, 422, 423, 424.)

⁵ The opinion in Duke IV vacated Section IV, part of Section III.A, and the burden of proof holding from Duke I. The facts were not affected by the subsequent rulings.

In addition to the general overview and undisputed facts set forth in that opinion, the following additional facts are relevant to this opinion.

Duke's Chairman of the Board and Chief Executive Officer, William S. Lee, testified before the North Carolina Utilities Commission⁶ on July 15, 1985, regarding twelve of Duke's

⁶ Lee also testified before the South Carolina Public Service Commission in Columbia, South Carolina, on July 30, 1985, regarding a rate increase that Duke was seeking. (Pl.'s Br. in Supp. of Mot. for Summ. J. ("Pl.'s Br."), Ex. 10 (Doc. 435-11) at 5.) During his testimony, Lee described the plants in ECS:

Finally, the Company is undertaking a program to rehabilitate certain of our older fossil units, representing approximately 997 mw of capacity. These units are no longer reliable because of their age and because their use as peaking units in the past few years has stressed the units, which originally were designed for base load use. The old coal-fired units generally will require repair or replacement of turbine rotors, precipitators and feedwater heaters, reinsulation of generator rotors, rewinding of generator stators, retubing of condensers, and many other unit specific refurbishments to make them reliable. We have been operating these units on a "patch and run" basis Historically, units of this age and condition would be retired and scrapped. We are attempting to rehabilitate the units, however, because we believe that it will be substantially cheaper to rehabilitate them than to build new units as future additions to capacity.

(Id. at 18-19.) On July 31, 1985, Lee testified that "[i]n the case of nine of [the plants], they simply can not be operated. In the case of three of them, from time to time they might be operated in an emergency. But they can not be called upon by the dispatcher whenever he needs capacity." (Pl.'s Br., Ex. 16 (Doc. 435-17) at 21.)

units⁷ that had been placed in ECS. When questioned about whether the 997 megawatts of power from the extended cold shutdown plants were actually available, although the reliability of the plants was suspect, Lee responded,

No, sir. On those 12 units - those 12 units are not available for the dispatcher to use, and nine of them he can't even touch. Three of them he could call on in an emergency, but nine of them simply cannot be run. It isn't a matter of reliability that caused us to remove them. It's the fact that they're broke and they've got to be fixed.

(Pl.'s Br., Ex. 15 (Doc. 435-16) at 12; see also id., Ex. 16 (Doc. 435-17) at 23 (explaining that the twelve ECS units "had to come out or they were going to fly apart. There were some serious problems with the turbines and with the generators. I don't want to wreck the units; therefore, they are out of service until they can be restored."); id. at 27 (explaining that some plants' cracked rotor forgings could eventually burst and throw pieces of rotor up to half a mile).) He also

⁷ Lee identified twelve units in ECS: Allen 1 and 2, Buck 3 through 5, Cliffside 1 through 4, Dan River 1 and 2, and Riverbend 6. (Pl.'s Br., Ex. 14 (Doc. 435-15) at 48.) Here, the thirteen units at issue are: Allen 1 and 2, Buck 3 through 5, Cliffside 1 through 4, Dan River 3, and Riverbend 4, 6, and 7. (Pl.'s Br. (Doc. 435) at 11.) Dan River 3 and Riverbend 4 and 7 are not addressed in Lee's testimony.

explained, however, that it would take about three years to know what Duke was going to do with all twelve of the units.⁸ (Id.)

On July 16, 1985, Lee continued his testimony, and in general, he described the units in ECS as deteriorating and requiring "major rehabilitation" to make them "available to last into the next century for service." (Pl's Br., Ex. 14 (Doc. 435-15) at 48-49; see id. at 54-55 ("It became clear that this group of twelve units would not last until an expected retirement date, but rather had to be taken out of service and rehabilitated in a major way ["total rehabilitation"]").) He then outlined the state of each unit in particular.

According to Lee, Allen 1 was not available and could not be made available for service. He explained, "Allen 1 must have a precipitator replaced. Two of the turbine rotors must be repaired or replaced. . . . The feed water heaters need to be replaced. The generator rotor requires reinsulation of the copper, and the boiler has to be modified and upgraded in several areas." (Id. at 49.) Like Allen 1, Allen 2 required

⁸ See also Pl.'s Br., Ex. 16 (Doc. 435-17) at 20-21 (explaining that the twelve units were "deteriorating in their reliability . . . such that with a number of them it became dangerous to continue the operation, and it was clear they would not last till their normal retirement date. They were removed from service. Now we are going into those units and examing [sic] them in great detail. And that is the study of their rehabilitation.").

replacement of the precipitator and feed water heaters, reinsulation of the generator rotor, and modification and upgrade of the boiler. Allen 2 also needed a complete rewinding of the stator (requiring "new copper coils, insulation, and the works"), and was "not available for service at all." (Id.)

Buck 3's stator required rewinding, and the boiler required major replacements. In addition, it had a "condemned generator rotor," which meant that it was "too dangerous to operate under any circumstances" and was therefore also not available for service. (Id. at 49-50.) Buck 4, which was also "not available for service at all," required rewinding of the stator, reinsulation of the generator rotor, replacement of major portions of the boiler superheater water walls and the drum circulation system, and replacement of condenser tubes. (Id.) Buck 5 had indications of cracking in the generator rotor forging and the rotor itself, requiring both to be replaced. (Id.) Additionally, according to Lee, "[m]ajor portions of the boiler's water walls, tubes, and the reheater tubes have got to be replaced." (Id.) Buck 5 "could be made available for limited duty for emergencies only." (Id. at 51.)

Cliffside 1 required retubing of the condenser, replacement of the feed water heaters, rewinding of the generator stator, and was "not available for service at all." (Id.) Cliffside 2

had the same problems as Cliffside 1, but also required a rewinding of the generator rotor. (Id.) Consequently, it, too, was "not available for service at all." (Id.) Cliffside 3 needed rewinding of the generator stator, reinsulation of the rotor, and replacement of the feed water heaters and the cracked high-pressure turbine shell. (Id. at 51-52.) Cliffside 3 was "not available for service at all." Cliffside 4 required many of the same repairs and was also not available for service at all. (Id. at 52.)

Finally, Riverbend 6 required replacement of low-pressure feed water heaters and "major portions of the water wall tubes in the boiler," rewinding of the generator rotor and the stator, and repair or replacement of the cracked turbine. (Id. at 53.) The plant was "available for service under extreme emergency conditions for only a few times, or we'll lose it altogether." (Id.)

On September 3, 1986, Lee again testified before the North Carolina Utilities Commission in regards to Duke's application seeking authority to increase its rates and charges for electrical service. (Pl.'s Br., Ex. 12 (Doc. 435-13) at 7.) Lee addressed ECS and PMP, explaining that "[r]ather than retire the units, we adopted the ECS program to rehabilitate them and extend their lives." (Id. at 15 (describing how the units in

ECS "could no longer provide reliable service as a result of their age and condition").) Lee explained, "The obvious benefit of PMP is that we add capacity at very reasonable cost." (Id. at 17.) On April 12, 1991, Lee testified before the North Carolina Utilities Commission that Duke was continuing the PMP, describing it as "a program for our older coal fired units which was begun in 1985 to allow those units to operate well beyond their expected retirement at the end of their initial design life." (Pl.'s Br., Ex. 13 (Doc. 435-14) at 4, 8.)

Additional undisputed facts will be addressed as necessary throughout this opinion.

II. STANDARDS OF REVIEW

A. Motions in Limine and Expert Testimony

Federal law governs the admissibility of expert testimony. See Bryte ex rel. Bryte v. Am. Household, Inc., 429 F.3d 469, 476 (4th Cir. 2005). Federal Rule of Evidence 702 provides:

A witness who is qualified as an expert by knowledge, skill, experience, training, or education may testify in the form of an opinion or otherwise if:

(a) the expert's scientific, technical, or other specialized knowledge will help the trier of fact to understand the evidence or to determine a fact in issue;

(b) the testimony is based on sufficient facts or data;

(c) the testimony is the product of reliable principles and methods; and

(d) the expert has reliably applied the principles and methods to the facts of the case.

An expert's testimony is admissible under Rule 702 if it "rests on a reliable foundation and is relevant." Westberry v. Gislaved Gummi AB, 178 F.3d 257, 260-61 (4th Cir. 1999) (quoting Kumho Tire Co. v. Carmichael, 526 U.S. 137, 141 (1999) (internal quotation marks omitted)); see Westberry, 178 F.3d at 260 ("The first prong of this inquiry [under FRE 702] necessitates an examination of whether the reasoning or methodology underlying the expert's proffered opinion is reliable - that is, whether it is supported by adequate validation to render it trustworthy. The second prong of the inquiry requires an analysis of whether the opinion is relevant to the facts at issue." (citations omitted)).

This court, which serves a gate-keeping function, remains conscious of "two guiding, and sometimes competing, principles:"

On the one hand, the court should be mindful that Rule 702 was intended to liberalize the introduction of relevant expert evidence. And, the court need not determine that the expert testimony a litigant seeks to offer into evidence is irrefutable or certainly correct. As with all other admissible evidence, expert testimony is subject to being tested by "[v]igorous cross-examination, presentation of contrary evidence, and careful instruction on the burden of proof." On the other hand, the court must recognize that due to the difficulty of evaluating their testimony, expert witnesses have the potential to "be both powerful and quite misleading." And, given the potential persuasiveness of expert

testimony, proffered evidence that has a greater potential to mislead than to enlighten should be excluded.

Id. at 261 (citations omitted).

B. Summary Judgment

In this suit, Duke has also moved for summary judgment, which is appropriate "if the movant shows that there is no genuine dispute as to any material fact and the movant is entitled to judgment as a matter of law." Fed. R. Civ. P. 56(a). Material facts are those that "might affect the outcome of the suit under the governing law." Anderson v. Liberty Lobby, Inc., 477 U.S. 242, 248 (1986). This court must view all of the evidence "in the light most favorable to the party opposing the motion." Zahodnick v. Int'l Bus. Machs. Corp., 135 F.3d 911, 913 (4th Cir. 1997). At issue is whether Duke should have sought a pre-project permit for any of the projects in this suit. "[T]o trigger [the] PSD permitting requirement, there must be (1) a 'physical change' and (2) a 'significant net emissions increase.'" Duke IV, 2010 WL 3023517, at *2.

Because summary judgment must be determined based on consideration of "admissible evidence" (see Rule 56), this court will first determine Duke's motions in limine and then address its summary judgment motion.

III. MOTIONS IN LIMINE

Duke has raised objections to four separate expert witnesses designated by the Government. (See Docs. 421, 422, 423, 424.) The Government's experts employ two separate methodologies in support of the Government's case: the GADS methodology and the PROMOD methodology. (See Duke Energy's Br. in Supp. of Mot. in Limine ("Duke's Br.") (Doc. 425).) The testimony of the four expert witnesses and the corresponding objections are directed to those two methodologies. For the reasons that follow, this court finds that Duke's objection to the expert testimony regarding the GADS methodology should be sustained, as the parties agree that the GADS methodology and resulting testimony are irrelevant. This court further finds that Duke's objection to the expert testimony regarding the PROMOD methodology should be sustained in part and overruled in part as explained below.

A. GADS Methodology

The "GADS methodology" takes "pre-project availability data gathered from the Generating Availability Data System ('GADS') database and post-project utilization assumptions provided by [the Government's expert, Robert] Koppe." (Duke's Br. (Doc. 425) at 26.) According to Duke,

[GADS] first assumes that the like-kind component replacement projects in this case increase the

availability of the entire unit by allowing the unit to "recover" outage time and "derates" previously lost due to the now-replaced component. It then assumes that such an increase in the availability of a unit results in a proportionate increase in generation from that unit, thereby yielding greater emissions. [The Government's expert Dr. Ranajit] Sahu's calculations attempt to quantify the precise increase in emissions that he asserts should have been predicted from the alleged increase in availability.

(Id. at 27.)

Duke argues that the GADS methodology is inapplicable to the thirteen units still at issue in this case, all of which were PMP units being kept in ECS. The Government agrees with Duke that GADS is inapplicable to these thirteen units⁹ and asserts that "Duke's arguments about the reliability of the 'GADS methodology' are a distraction, because that methodology is not at issue in this case."¹⁰ (Pl.'s Opp'n Br. (Doc. 436) at 22.) According to the Government, "this Court need not wade into any of these disputes over the GADS methodology, because as

⁹ While acknowledging that the GADS methodology is irrelevant in this case, the Government does assert that GADS is a valid and tested methodology, validated by the Electric Power Research Institute, an independent research arm of the utility industry, and previously employed by Duke. (Pl.'s Opp'n Br. (Doc. 436) at 36-37.)

¹⁰ "Indeed, Duke was advised eight years ago that Plaintiffs were not relying on the availability-based GADS methodology for PMP claims." (Pl.'s Opp'n Br. (Doc. 436) at 35.)

explained above it is not at issue for any of the PMP claims.”
(Id. at 38.)

Since both parties agree that GADS does not apply to the thirteen plants at issue,¹¹ this court grants Duke’s motion to exclude testimony regarding GADS, at least for purposes of this summary judgment determination.

B. PROMOD Methodology

The second methodology at issue, PROMOD, is a computerized system dispatch model used by Duke to “forecast near-term fuel needs and long-term future additions to capacity.” (See Duke’s Br. (Doc. 425) at 28.) PROMOD uses algorithms to “convert a

¹¹ Additionally, in its consolidated reply in support of its motions in limine and summary judgment motion, Duke also asserts that the GADS testimony is relevant for impeachment purposes, including showing that the PMP units were not inoperable prior to ECS and that a non-zero baseline is appropriate for measuring increases in emissions. (Duke Energy’s Consol. Reply in Supp. of Mot. in Limine & Mot. for Summ. J. (“Duke’s Reply”) (Doc. 440) at 12-13 (“[T]he fact that these experts defended both Plaintiffs’ GADS and PROMOD methodologies as reliable for the PMP projects – even though those methodologies generate wildly inconsistent results – calls into question the validity of both approaches and underscores the need for rigorous validation testing that Sahu and Koppe failed to undertake.”).) But see Pl.’s Mem. in Opp’n to Duke Energy’s Mot. for Summ. J. (“Pl.’s Mem. in Opp’n”) (Doc. 437) at 6 n.1 (“[The fact] that an inapplicable analysis based on GADS data would provide different results than Duke’s PROMOD predictions is hardly surprising, given the differences between the two types of data and the facts of the Plant Modernization Program” because GADS is used to “predict availability improvements from discrete component replacements” and is, by definition, “relevant to outages at operating plants,” which the PMP units were not.).

'large volume of input data assumptions' into projected future 'outputs' including the 'capacity factor' of the various units." (Id. at 29.) Two of the Government's experts, Mr. Biewald and Mr. Hayet, used PROMOD fuel budget modeling runs, allegedly from around the time of the modifications at issue, and gave Dr. Sahu, another Government expert, the "projected capacity factors from those runs for the units at issue." (Id.) Dr. Sahu then took the "capacity factor outputs from the modeling runs and converted them into (retrospective) projections of future generation by the unit." (Id.) Using these projections, Dr. Sahu claims to have "projected what emissions would occur after the [PMP] projects." (Id. at 29-30.) Then, Dr. Sahu compared the baseline of how much the units were emitting before they were restarted¹² (generally zero because the PMP units had been in ESC) with his prediction of emissions after the units were restarted. (Id. at 30.)

Duke argues that the portion of Dr. Sahu's testimony that was based on the "actual-to-potential" test should be excluded

¹² For the thirteen units at issue in this case, Dr. Sahu "calculated a baseline of two years prior to the restart of the units following the PMP work." (Duke's Br. (Doc. 425) at 30.)

as irrelevant because Duke IV rejected that test.¹³ See Duke IV, 2010 WL 3023517, at *5 (“[T]he plain language of the regulations requires a utility to obtain a pre-construction permit when proposed changes ‘would increase the actual annual emission of a pollutant above the actual average for the two prior years.’ Thus, a comparison must be made between pre-project levels of actual emissions and post-project levels of actual emissions¹⁴.”). This court agrees that testimony based on the actual-to-potential test should be excluded, as Duke IV held that the issue to be determined is “actual-to-projected-actual” test. See Duke IV, 2010 WL 3023517, at *5.

Additionally, Duke claims that PROMOD is neither “helpful” under Rule 702 nor “relevant” under Rule 402 (Duke’s Br. (Doc. 425) at 49), and specifically argues that the Government’s expert testimony regarding PROMOD should be excluded because: (1) the methodology “completely fails to address the essential

¹³ “Accordingly, Sahu’s testimony regarding the ‘actual-to-potential test’ is legally irrelevant, must be excluded under Rule 402 of the Federal Rules of Evidence, and is thus [] not otherwise addressed in this motion.” (Duke’s Br. (Doc. 425) at 26.)

¹⁴ “According to Duke III, ‘[a]ctual emissions’ are measured ‘in a manner that looks to the number of hours the unit is or probably will be actually running.’ If an increase in hours of operation is caused or enabled by a physical change, the increased hours must be included in the pre-project calculus.” Duke IV, 2010 WL 3023517, at *5 (quoting Duke III, at 577-78).

element of causation, part of the government's burden of proof," and (2) the Government's experts apply PROMOD "in a manner inconsistent with related requirements regarding the 'before' and 'after' period to be used to determine whether there has been an emissions increase."¹⁵ (Id.)

The question of the "before" and "after" period requires resolution of the appropriate baseline regulation determination, a significant issue in this case.

1. Causation

Duke argues that the Government's expert testimony regarding PROMOD is "irrelevant because [PROMOD] does not address the necessary element of causation." (Duke's Br. (Doc. 425) at 51; see id. at 14 n.5 ("The government has conceded through its expert that this causation requirement exists in

¹⁵ Duke argues that the Government's expert testimony regarding PROMOD uses the wrong baseline period (see infra Part III.B.2). Duke and the Government also contest whether Dr. Sahu used more recent projected emissions (the two years immediately after the projects) or more distant projected emissions (almost ten years after the projects) as the basis for his opinion. According to Duke, Dr. Sahu based his opinion that the projects could be expected to cause a significant emissions increase on the more distant projection. (Duke's Br. (Doc. 425) at 30 and n.23.) According to the Government, however, Dr. Sahu used the more recent projection in developing his opinion. The Government identifies a "dispute of fact as to use of long-term predictions of generation to calculate post-project emissions. However, Duke concedes that even using short-term predictions, there was an emissions increase if the Court applies EPA's interpretation of the baseline regulations." (Pl.'s Mem. in Opp'n (Doc. 437) at 10 n.2.)

both the 1980 rules and the 1992 WEPCo rules." (citing [Duke's Br. (Doc. 425) Ex. 25 (Doc. 427)] Dep. of Ranajit Sahu at 286:9-20)); Expert Report of Frank C. Graves ("Graves Rep.") (Doc. 428-10) at 5 (asserting that Government expert Dr. Sahu's analysis "shows no causality whatsoever").) "NSR will not apply unless EPA finds that there is a causal link between the proposed change and any post-change increase in emissions." 57 Fed. Reg. at 32,314, 32,326 (July 21, 1992) (explaining that increased operations resulting from "system-wide demand growth, which would have occurred and affected the unit's operations even in the absence of the physical or operational change," should be excluded from calculations of future actual emissions). According to the Duke IV opinion, "[i]f an increase in hours of operation is caused or enabled by a physical change, the increased hours must be included in the pre-project calculus." Duke IV, 2010 WL 3023517, at *5 (citing Duke III at 577-78). According to Duke, "[a]ll the PROMOD proves is the unremarkable proposition that Duke expected to run the units more in the long-term future because it expected ongoing increases in system-wide demand for electricity." (Duke's Br. (Doc. 425) at 51.)

The Government claims that causation is established by Duke's own documents and testimony¹⁶ as well as the testimony of the Government's expert Mr. Koppe.¹⁷ (See Pl.'s Opp'n Br. (Doc. 436) at 25 ("Mr. Koppe will testify that 'all' of the electricity that Duke expected to generate from the plants was directly 'attributable to the PMP' and 'could not have been accomplished without it.'").)¹⁸ The Government argues that the units were inoperable prior to being put in ECS (see Pl.'s Br. (Doc. 435) at 7, 8 (repeatedly referring to these thirteen PMP units as "mothballed")), and that causation can therefore be deduced from any production and emissions after the PMP modifications. (See Pl.'s Opp'n Br. (Doc. 436) at 24 (arguing that "all post-project operations at [Duke's] renovated plants

¹⁶ See Pl.'s Opp'n Br. (Doc. 436) at 25 n.20; Pl.'s Mem. (Doc. 435) at 12-15.

¹⁷ The Government argues that the opinions of Mr. Biewald and Mr. Hayet, who testified about PROMOD, should not be excluded simply because, in addition to testifying about Duke's use of and predictions using PROMOD, they "did not also offer opinions on whether the generation predicted by Duke's 'forecasts' was causally linked to the modernizations." (Pl.'s Opp'n Br. (Doc. 436) at 23.)

¹⁸ Dr. Koppe specifically concluded, inter alia, that "[p]rior to each activity, it should have been expected that the replacements would increase the amount of electricity produced. . . . The replacements were expected to eliminate the problems that caused outages, thereby increasing the availability of the unit." (Expert Report of Robert H. Koppe ("Koppe Rep.") (Doc. 436-2) at 17.)

resulted from the Plant Modernization Program"); see also Koppe Rep. (Doc. 436-2) at 59 ("Duke considered the purpose of the PMP to be to extend the lives of units that would otherwise have to be retired, by performing major modifications on boiler, turbine, control, and other systems."); Cf. id. at 60 ("Capacity factors for the PMP units in the early 1980s were very low because the units were shut down most of the time, because they were not needed (i.e. they were in reserve shutdown).").)

Duke, however, responds that the plants at issue were operable prior to being placed in ECS.¹⁹ "[The Government's position that the plants were inoperable] is contrary to the indisputable data showing that the PMP units were in fact operating at the time they were placed into ECS." (Duke's Reply (Doc. 440) at 13.) According to Duke, "the units, in fact, were not 'broken down' or 'inoperable for years.' To the contrary . . . these units were capable of generating and, in fact, did generate substantial power before they were temporarily shut down." (Id. at 8; see also Graves Rep. (Doc.

¹⁹ Duke circulated dehumidified air throughout the plants to keep them in working order and kept at least one plant in the system dispatch service at all times. (Duke's Br. (Doc. 425) at 21 n.13 ("Duke wanted to keep at least one unit operational at all times.")) Additionally, Duke argues that the GADS data actually shows that the plants were "capable of substantial generation at the time they were placed into ECS." (Duke's Reply (Doc. 440) at 10.)

428-10) at 14 ("The plants chosen for ECS were still operationally viable, but their economics had become unfavorable relative to the newer plants.").) If the units were operable, the Government will have much greater difficulty demonstrating how much, if any, of an emissions increase was caused by the PMP. (See Duke's Reply (Doc. 440) at 16 ("Plaintiffs make no attempt to demonstrate which portion of the emissions projected through PROMOD is attributable to the projects at issue rather than, for example, increased demand. Rather, Plaintiffs place the entire weight of their causation argument on the factual assertion that 'all post-project operations at [Duke's] renovated plants resulted from' the PMP projects."); Graves Rep. (Doc. 428-10) at 19 (asserting that "any projected increases in emissions are attributable to independent factors only, and not to repairs").)

Thus, while both parties' arguments depend upon a disputed issue of fact as to the operability or inoperability of the plants prior to the PMP (see Duke's Reply (Doc. 440) at 17 ("Plaintiffs' liability argument is entirely dependent on a factual showing that the units at issue were completely inoperable absent the PMP projects.") and Pl.'s Mem. in Opp'n (Doc. 437) at 8 ("At the very least this evidence establishes a material dispute of fact that is fatal to Duke's summary

judgment motion.”)), that dispute goes to the weight of the evidence, not to its admissibility. While there is a difference of opinion between the parties as to operability or inoperability, the Government has tendered evidence from various sources as to its proof of causation, and for that reason, Duke’s objection as to the admissibility of the PROMOD expert testimony on the basis of causation is not persuasive at this juncture of the proceedings.

The Government makes an additional argument that causation can also be established by judicial estoppel, and Duke is therefore estopped from challenging causation at all. (Pl.’s Br. (Doc. 435) at 34.) Judicial estoppel requires that: (1) the party against whom estoppel is sought “must be seeking to adopt a position that is inconsistent with a stance [factual rather than legal] taken in prior litigation”; (2) “the prior inconsistent position must have been accepted by the court”; and (3) the party sought to be estopped must have “intentionally misled [i.e., not by inadvertance or mistake] the court to gain unfair advantage.” Lowery v. Stovall, 92 F.3d 219, 224 (4th Cir. 1996). “Judicial estoppel precludes a party from adopting a position that is inconsistent with a stance taken in prior litigation. The purpose of the doctrine is to prevent a party

from playing fast and loose with the courts, and to protect the essential integrity of the judicial process." Id. at 223.

The Government cites State ex rel. Utilities Comm'n v. Eddleman, 320 N.C. 344, 357, 358 S.E.2d 339, 349 (1987), in which the North Carolina Supreme Court found that substantial evidence supported the North Carolina Utilities Commission's findings that twelve of Duke's units, which had been placed in ECS, could not "provide reliable service until major repairs can be performed which will take a number of years." The court relied on the testimony of William S. Lee, Duke's chairman, that "rehabilitation of these units would require repair or replacement of turbine rotors, precipitators and feed water heaters, reinsulation of generator rotors, rewinding of generator stators and retubing of condensers, among other things."²⁰ Id. at 358, 358 S.E.2d at 349. Ironically, in contrast to its arguments in this suit, the Government argued in Eddleman that "a proper measure of the company's capacity reserves should have assumed operational ability on the part of

²⁰ There, Duke had argued that these twelve units had been placed in ECS because they could no longer provide "reliable service." Eddleman, 320 N.C. at 356, 358 S.E.2d at 348. Mr. Lee testified that, over a three-year period, Duke would examine whether or not these units could be rehabilitated and, even if they could be rehabilitated, none of them could be brought back into service for at least several years. Id.

those units.”²¹ Id. at 356, 358 S.E.2d 348. Regardless, “not reliably operable” is not fully synonymous with “inoperable,” and the Eddleman opinion does not clarify whether Duke’s statements regarding either the rehabilitation of the units in ECS or the units’ inability to provide “reliable service” directly contradict its arguments in this case. As a result, this court is not able to conclude that Duke has or is attempting to intentionally mislead the court, and is unable to find on these facts that Duke is estopped from challenging causation.

Since the Government has presented sufficient evidence of causation to require overruling Duke’s objection to expert testimony on PROMOD, the question of causation will remain an issue of fact for determination at trial.

2. PROMOD Methodology and Resulting Baseline

Duke’s second basis for objection to the PROMOD expert witness testimony is that the “experts apply the methodology in a manner that conflicts with EPA’s own rules and the approved North Carolina SIP. [That is], they begin with a baseline of

²¹ In Eddleman, the Government argued that the Commission erred by failing to include the production capacity of the twelve units in ECS, at least half of which, according to the Government, had availability ratings of 100 percent. Eddleman, 320 N.C. at 356, 358 S.E.2d at 348. The Government claimed that Duke placed these twelve units in ECS simply to avoid excess-capacity problems. Id.

non-operations (i.e., a baseline of zero emissions).” (Duke’s Br. (Doc. 425) at 54.)

As found by the Duke IV opinion, this court will use an “actual-to-projected-actual test . . . to determine whether Duke Energy should have sought a pre-project permit for any of the projects at issue.” Duke IV, 2010 WL 3023517, at *5; see supra p. 18. Under that test, the calculation of actual emissions is the starting point, or baseline, for the final “actual-to-projected-actual” determination. The applicable PSD Regulations explain how to determine actual emissions, stating,

In general, actual emissions as of a particular date shall equal the average rate, in tons per year, at which the unit actually emitted the pollutant during a two-year period which precedes the particular date and which is representative of normal source operation. The reviewing authority may allow the use of a different time period upon a determination that it is more representative of normal source operation.

40 C.F.R. § 51.24(b)(21)(ii) (1981); see also 45 Fed. Reg. 52,676, 52,699 (Aug. 7, 1980). North Carolina’s SIP, effective June 18, 1976, adopted the regulation without change. See 15A N.C. Admin. Code 2D.0530 (“For the purposes of this Regulation the definitions contained in 40 C.F.R. 51.166(b) and 40 C.F.R.

51.301 shall apply."), approved at 47 Fed. Reg. 7836 (Feb. 23, 1982).²²

The parties dispute, however, whether this two-year baseline period should be the two years prior to the restart following ECS and PMP or the two years prior to ECS. Under the Government's PROMOD methodology, the baseline is zero emissions because the plants were in ECS and not in operation. Duke offers three related objections to EPA's use of the zero-emissions baseline: (1) North Carolina determined that the correct baseline period was the two years of plant operation prior to any ECS shutdown, thus precluding the EPA's use of a zero emissions baseline (Duke's Br. (Doc. 425) at 54); (2) North Carolina law (and NC DENR's approval) controls, while federal law (and EPA's interpretation) does not (Duke's Resp. in Opp'n to Pl.'s Mot. for Summ. J. ("Duke's Resp.") (Doc. 438) at 20-21); and (3) even if EPA's interpretation controls, it is neither long-standing nor consistent and is therefore not

²² This court will address the issue raised by the parties of whether the SIP is state or federal law and whose interpretation controls hereafter. While not controlling, it is notable that as to 40 C.F.R. § 51.24(b), North Carolina adopted those definitions without modification, change, or further explanation. See generally 15A N.C. Admin. Code 2D.0530. Thus, in interpreting the applicable regulations, the only formal regulatory interpretation is that contained in the original explanation of the rule by EPA and subsequent cases and EPA interpretations.

entitled to any deference by this court (Duke's Reply (Doc. 440) at 26). This opinion will address each objection in turn.

a. North Carolina's Interpretation and Determination

The parties contest whether North Carolina issued an interpretation, or made a determination, of the appropriate baseline. According to Duke, North Carolina made a determination that the applicable baseline period was two years before the relevant units were put into ECS.

Duke argues,

The federally approved SIP in North Carolina expressly gave the State permit reviewing authority the power to determine what two-year period before a project is representative of "normal source operations." For these 13 units, in temporary shutdown before the projects, NC DENR effectively did just that. In 1983, NC DENR decided that NSR would not apply when Duke restarted those units. In so doing, NC DENR necessarily determined that operation of Duke's units before they were temporarily shut down was the correct baseline period representative of normal source operations.

(Duke's Br. (Doc. 425) at 54.) In support of its argument, Duke points to several letters exchanged between Duke and Robert F. Helms, the Director of the North Carolina Division of Environmental Management of the Department of National Resources

and Community Development, later renamed the North Carolina Department of Environmental and Natural Resources ("NC DENR").²³

On August 17, 1983, Ronald V. Shearin, writing on behalf of Duke, requested NC DENR's "concurrence with our interpretation of State regulatory requirements which might be applicable to Duke Power's placement of designated coal-fired units in an extended cold shutdown status." (See Duke's Br., Ex. 3 (Doc. 425-4) at 2 (expressing particular concern about the future application of NSPS and PSD).) In this letter, Mr. Shearin explained that Duke planned to put a "series of older units in an extended cold shutdown status." He explained,

Based on information currently available, it appears that these units will not be needed until approximately 1991, when they will be brought back on-line with minimal expenditures. While in an extended cold shutdown mode, the units will be properly maintained to permit bringing them on-line as quickly as possible when needed.

(Id. (anticipating that Duke would need four to six weeks to bring a unit back into service).) Mr. Shearin also explained that "[d]uring the period of temporary cold shutdown," Duke intended to keep all permits up to date and circulate

²³ This court uses the abbreviation "NC DENR" for both the North Carolina Department of Environment and Natural Resources and the Department of Natural Resources and Community Development.

dehumidified air through the units to prevent corrosion. (Id. at 2-3.)

In response to Mr. Shearin's letter, Mr. Helms wrote back "concur[ring]" with Duke's assessment, explaining that "[p]lacing units constructed prior to August 17, 1971, in an extended cold shutdown status does not affect the exempt status from 15 NCAC 2D.0524 New Source Performance Standards." (Duke's Br., Ex. 5 (Doc. 425-6) at 2.) He also explained, "[t]he units do not have to meet the Prevention of Significant Deterioration (PSD) requirements of 15 NCAC 2D.0530 if the existing permits remain active and the units are not used for any emissions credits or to project compliance with ambient standards." (Id.)

The Government attacks Duke's "new assertion that North Carolina sub silentio determined that a non-zero baseline was appropriate" (Pl.'s Opp'n Br. (Doc. 436) at 26), pointing out that Duke's letter "did not even hint at the possibility of the Plant Modernization Program." (Id. at 13.) According to the Government, Duke neither sought permission to renovate its plants, which Duke's letter alleged would be brought online with "minimal expenditures," nor sought permission for a non-zero baseline to apply to the renovations at issue. (Id. at 26.) For PSD permitting requirements to apply, there must be a physical change or change in the method of operation of the

unit. Duke mentions no physical change in its 1983 letter to NC DENR (Duke's Br., Ex. 3 (Doc. 425-4) at 3) as was subsequently described in Mr. Lee's 1985 testimony (see supra pp. 6-11), and therefore NC DENR was left without the opportunity to evaluate fully Duke's ECS plans.

This court agrees with the Government and finds that the letters exchanged between Duke and NC DENR cannot substantiate NC DENR's alleged approval of a non-zero baseline, because Duke failed to describe the PMP or any expenditures other than those characterized as "minimal."²⁴

Relatedly, Duke asserts that the deposition testimony of Mr. John Evans, an Engineer III in the Department of Environment and Natural Resources, shows that North Carolina would have used a non-zero baseline. (Duke's Br. (Doc. 425) at 57-58; see also Pl.'s Opp'n Br., Ex. 65 (Doc. 436-23) at 7.)

²⁴ The term "minimal" is somewhat vague, and does not fully describe whether the expenditures were routine maintenance or new construction. However, given Mr. Lee's testimony, there does not appear to be a dispute that the PMP was something more than "minimal" expenditures, especially in light of the requested rate increase.

Mr. Evans, who headed up the "NSR, PSD section for the Division of Air Quality"²⁵ (Pl.'s Opp'n Br., Ex. 65 (Doc. 436-23) at 8), explained that he was unfamiliar with Duke's extended cold shutdown and plant modernization programs. (Id. at 14.) At his deposition, however, he read the letters exchanged between Mr. Helms and Mr. Shearin and explained that, "if the intent was to not shut the unit down permanently," then the "starting point [baseline] would be the two years prior to the shutdown."²⁶ (Id. at 10-13.) When asked by the Government, "If you were presented with the situation where you determined there was a modification that had occurred during a relatively long period of shutdown,

²⁵ As an Engineer III, Mr. Evans "coordinate[d] all the PSD applications that are in house. I don't have direct supervisory responsibility for the engineers who work on the PSD permits, but I direct them, give them guidance, review their work, act in a sense as an - in a supervisory capacity but not direct supervision." (Pl.'s Opp'n Br., Ex. 65 (Doc. 436-23) at 9.) Mr. Evans explained that he had "occasion to focus on calculating emission increases for PSD purposes" including revising the work of the engineer working on "at least one or two PSD applications [from Duke] for combustion turbine projects at Duke Energy facilities." (Id. at 9-10.) These PSD applications were for new rather than existing sources. (Id. at 14.)

²⁶ See id. at 17-18 ("I could tell you how North Carolina will [calculate baseline emissions when there has been a modification]. I don't know how EPA does it, but in North Carolina we start with the few years prior to the modification, or the shutdown, as a starting point. If that's not representative of new source operation, this facility can make a demonstration with that and we agree, we will allow some other period.").

say near the end of the shutdown, would you research that issue with folks in your office to determine how best to calculate emissions?", Mr. Evans replied,

I probably wouldn't. I mean, again, not my bailiwick. Again we would just go back to the two years. Again, this is [an] assumption that it is not a new - there was no intent to permanently shut the unit down. If we start from there, even if they make a modification at the end of that period, we would still go back to the period against our two years prior to the shutdown, however long the shutdown is.

(Id. at 19-20.) Mr. Evans clarified that he would look to EPA guidance on how to calculate emissions to the extent North Carolina's rules did not cover a particular area or were ambiguous. (Id. at 21.)

According to the Government, however, the "hearsay" and "post hoc" testimony of Mr. Evans should be given "no weight."²⁷ (Pl.'s Opp'n Br. (Doc. 436) at 27 n.21 (citing United States v. Hoechst Celanese Corp., 128 F.3d 216, 223 n.5 (4th Cir. 1997) (explaining that "we give no weight to the 1995 affidavit of a former EPA employee . . . which was prepared and submitted . . .

²⁷ In an effort to diminish the weight of his opinion, the Government points out Mr. Evans held a "basic coordinating position" with no staff reporting to him. (Pl.'s Opp'n Br. (Doc. 436) at 27.) As Duke explains, however, Mr. Evans did oversee "NSR, PSD section for the Division of Air Quality." (Id., Ex. 65 (Doc. 436-23) at 8.)

for this litigation. Like similar affidavits from individual legislators, it is entitled to no weight as to the meaning of legislation enacted, or in this case a regulation promulgated, eleven years earlier"))). Although Mr. Evans, unlike the declarant in Hoechst Celanese, was not simply testifying about the meaning of legislation many years after its enactment, his speculation about what baseline North Carolina would have used for a plant that had been shut down for an extended period of time and had been modified during that time still proves problematic. Mr. Evans repeatedly referenced what North Carolina "would" do in certain situations. (See generally Pl.'s Opp'n Br., Ex. 65 (Doc. 436-23).) He could not recall ever having dealt with a plant that was shut down for twenty or thirty years or with a plant that had been modified during a relatively long shutdown. (Id. at 19-21.) Because of the speculative nature of Mr. Evans' testimony, the change in circumstances between Duke's original representation of "minimal expenditures" and the actual PMP, and absence of further clarification from North Carolina's SIP or NC DENR's 1983 letter to Duke, this court is not persuaded that NC DENR actually determined the appropriate baseline period for the thirteen

units subject to the PMP, or that North Carolina issued a formal determination which might otherwise control in this case.

b. Whose Interpretation Controls?

Assuming *arguendo* that NC DENR did render some type of interpretation or permitting action, the Government and Duke contest whether EPA's or North Carolina's interpretation of North Carolina's SIP should control. Duke argues that North Carolina's interpretation of its own SIP should control (Duke's Resp. (Doc. 438) at 14), while the Government argues that this court should defer to EPA's interpretation (Pl.'s Reply to Resp. to Mot. For Summ. J. ("Pl.'s Reply") (Doc. 439) at 9). As discussed above, Duke argues that North Carolina would use a baseline period of two years prior to a unit's entry into ECS, while the Government contends that the proper baseline is two years before modifications were made - in the case of the

thirteen units at issue, a zero baseline.²⁸

²⁸ Duke argues that the Government “stipulated away their ‘zero baseline’ position in order to appeal this Court’s ruling in Duke I.” (Duke’s Reply (Doc. 440) at 14.) According to the parties’ stipulations:

1. Plaintiff and Plaintiff-Intervenors stipulate that their contention that each of the projects at issue in this case resulted in a significant net emissions increase within the meaning of the relevant PSD regulations is based solely on their contention that the projects would have been projected to result in an increased utilization of the units at issue.

2. Plaintiff and Plaintiff-Intervenors stipulate that they do not contend that the projects at issue in this case caused an increase in the maximum hourly rate of emissions at any of Duke Energy’s units.

(Stipulations (Doc. 311) at 1-2.); see Duke IV, 2010 WL 3023517, at *8 (“As part of the parties’ joint stipulations, the EPA and Intervenor-Plaintiffs stipulated that none of the Duke Energy projects at issue increased the unit’s maximum hourly rate of emissions.”)).

The Government argues, however, that Duke “asks the Court to divine the effect of a stipulation concerning the operation of an inapplicable legal test that was rejected and reversed by the Supreme Court.” (Pl.’s Reply (Doc. 439) at 12.) “Duke’s argument fails to acknowledge that any supposed link between PSD and the separate maximum hourly rate test was severed by Duke III, which held that the maximum hourly test ‘simply cannot be squared’ with the PSD rules.” (Id. at 13 (quoting Duke III, 549 U.S. at 578).) Additionally, the Government points out that the stipulations explicitly preserve Plaintiffs’ argument that Duke expected each project to “result in an increased utilization of the units at issue.” (Id.)

This court finds that there is a difference in emissions analysis, particularly in light of the “actual-to-projected-actual” test, depending upon an hourly measure as opposed to an annual measure. Because of the difference, this court does not find the stipulation conclusive. Nevertheless, EPA’s stipulation, in light of its various reasonable interpretations, points to the difficulty in dealing with regulations that are not a model of clarity.

In support of their arguments, both parties cite the Supreme Court's decision in Alaska Dep't of Env'tl. Conservation v. Env'tl. Prot. Agency, 540 U.S. 461 (2004). In Alaska, the Court determined that EPA could "act to block construction of a new major pollutant emitting facility permitted by ADEC [Alaska's Department of Environmental Conservation, the "permitting authority"] when EPA finds ADEC's BACT²⁹ [Best Available Control Technology] determination unreasonable in light of the guides 7479(3) prescribes[.]" Id. at 469.³⁰

Like North Carolina's SIP, Alaska's SIP had been approved by EPA. Id. at 470. The language of Alaska's SIP tracked the requirement and definition of the BACT in the CAA. Id. at 473. ADEC "employed EPA's recommended top-down methodology" to determine the BACT but then endorsed a method that was not the BACT. Id. at 475-76. EPA found, and the Supreme Court agreed,

²⁹ Under the CAA's PSD program, "no major air pollutant emitting facility may be constructed unless the facility is equipped with 'the best available control technology' (BACT)." Id. at 468.

³⁰ The Court explained, "[i]n keeping with the broad oversight role §§ 113(a)(5) and 167 vest in EPA, the Agency maintains, it may review permits to ensure that a State's BACT determination is reasonably moored to the Act's provisions. We hold, as elaborated below, that the Agency has rationally construed the Act's text and that EPA's construction warrants our respect and approbation." Id. at 485.

that ADEC had acted unreasonably.³¹ Id. at 485 (explaining that EPA had interpreted the CAA "rationally" and that its "construction warrants our respect and approbation").

In response, ADEC argued that, "[b]ecause the Act places responsibility for determining BACT with 'the permitting authority,' . . . CAA excludes federal Agency surveillance reaching the substance of the BACT decision." Id. at 488. Although the Supreme Court acknowledged that Congress had "entrusted state permitting authorities with initial responsibility to make BACT determinations 'case by case,'" it observed,

³¹ Despite finding that an emission control technology known as selective catalytic reduction (SCR) was the BACT according to EPA's top-down methodology, ADEC endorsed an alternative technology proffered by the corporation at issue. Id. at 476-77. After being confronted by EPA, who explained that once "it is determined that an emission unit is subject to BACT, the PSD program does not allow the imposition of a limit that is less stringent than BACT," ADEC again endorsed the alternative technology, this time contradicting its earlier assessment that SCR was the BACT. Id. at 478. EPA found that ADEC's conclusion was "not supported by the record and [was] clearly erroneous," and its decision was "both arbitrary and erroneous." Id. at 479, 480; see id. at 484 (noting that 42 U.S.C. § 7413(a)(5), "[i]n notably capacious terms," "armed" EPA with authority to issue orders stopping plant construction when a state was not acting in compliance with the CAA).

Under ADEC's interpretation, EPA properly inquires whether a BACT determination appears in a PSD permit, but not whether that BACT determination "was made on reasonable grounds properly supported on the record." Congress, however, vested EPA with explicit and sweeping authority to enforce CAA "requirements" relating to the construction and modification of sources under the PSD program, including BACT. We fail to see why Congress, having expressly endorsed an expansive surveillance role for EPA in two independent CAA provisions, would then implicitly preclude the Agency from verifying substantive compliance with the BACT provisions and, instead, limit EPA's superintendence to the insubstantial question whether the state permitting authority had uttered the key words "BACT."

Id. at 489-90 (citations omitted). The Supreme Court, however, also emphasized the "limited role" of EPA, which had acknowledged the need to give appropriate deference to and not to second guess state decisions. "Only when a state agency's BACT determination is 'not based on a reasoned analysis,' [as in Alaska] may EPA step in to ensure that the statutory requirements are honored." See id. at 490-91 ("EPA's limited but vital role in enforcing BACT is consistent with a scheme that 'places primary responsibilities and authority with the States, backed by the Federal Government.'").

According to Duke, Alaska stands for the proposition that EPA may not override North Carolina's "reasonable designation" when it acts "within the range of permissible judgments" and

"makes clear that Plaintiffs' attempt to 'second guess' NC DENR is too late."³² (Duke's Reply (Doc. 440) at 24.)

According to the Government, Alaska "does not address the question of deference due an agency's regulatory interpretation."³³ (Pl.'s Reply (Doc. 439) at 10.) It argues that Alaska "has been cited for the proposition that, were a state and EPA to disagree about a SIP, EPA's interpretation

³² See Alaska, 540 U.S. at 495 (explaining that Alaska involved "preconstruction orders issued by EPA, not postconstruction federal Agency directives" and "EPA itself regards it as 'imperative' to act on a timely basis, recognizing that courts are 'less likely to require new sources to accept more stringent permit conditions the farther planning and construction have progressed'" (citations omitted); (Duke's Reply (Doc. 440) at 24 ("Here, the first PMP project was completed nearly a decade before the Plaintiffs brought this case, and all of the projects had been completed years before Plaintiffs acted.")).)

³³ In Alaska, the Supreme Court observed that EPA's interpretation, presented in guidance memoranda, did not qualify for Chevron deference but did warrant respect. See id. at 487-88 (explaining that "[c]ogent 'administrative interpretations . . . not [the] products of formal rulemaking . . . nevertheless warrant respect") (quoting Washington State Dep't of Soc. & Health Servs. v. Guardianship Estate of Keffeler, 537 U.S. 371, 385 (2003)) and Christensen v. Harris Cnty., 529 U.S. 576, 587 (2000) ("Interpretations such as those in . . . policy statements, agency manuals, and enforcement guidelines, all of which lack the force of law - do not warrant Chevron-style deference.")).

would 'prevail.'" (Id. (citing United States v. Ala. Power Co., 372 F. Supp. 2d 1283, 1291-92 (N.D. Ala. 2005))

In support of its argument that North Carolina's interpretation of its SIP is controlling, Duke also cites Train v. Natural Resources Defense Council, Inc., 421 U.S. 60 (1975), which states,

The Agency [EPA] is plainly charged by the Act with the responsibility for setting the national ambient air standards. Just as plainly, however, it is relegated by the Act to a secondary role in the process of determining and enforcing the specific, source-by-source emission limitations which are necessary if the national standards it has set are to be met. . . . The Act gives the Agency no authority to question the wisdom of the State's choices of emission limitations if they are part of a plan which satisfies the standards of § 110(a)(2), and the Agency may devise and promulgate a specific plan of its own only if a State fails to submit an implementation plan which satisfies those standards.

Id. at 79. This statement is dicta, and the Supreme Court's holding actually upheld EPA's interpretation of § 110(a)(3). Id. at 98. Furthermore, while this statement indicates that EPA should approve a state's SIP that complies with the CAA, it does not state that EPA must also defer to the state's interpretation

of that SIP.³⁴ North Carolina's SIP, 15A N.C. Admin. Code 2D.0531, on the question of PSD regulations, incorporates the federal regulations without any significant modification or further explanation.

Duke also cites United States v. Interlake, Inc., 432 F. Supp. 985 (N.D. Ill. 1977), Florida Power & Light Co. v. Costle, 650 F.2d 579 (5th Cir. 1981), United States v. General Dynamics Corp., 755 F. Supp. 720, 722 (N.D. Tex. 1991),³⁵ United States v. Riverside Labs., Inc., 678 F. Supp. 1352, 1356 (N.D. Ill. 1988),

³⁴ See Steve Novick & Bill Westerfield, Whose SIP Is It Anyway? State-Federal Conflict in Clean Air Act Enforcement, 18 Wm. & Mary Envtl. L. & Pol'y Rev. 245 (1994), <http://scholarship.law.wm.edu/wmelpr/vol18/iss2/2> ("The [Train] decision states that EPA should approve a SIP that meets the NAAQS, not that once EPA has approved a SIP, the state can interpret the SIP any way it so chooses. Indeed, the Train decision itself is an example of deference to an EPA interpretation of the Clean Air Act. Just two years after Train, however, parties were quoting its dicta in support of the proposition that the United States should not be permitted to enforce a SIP until the state has construed it.").

³⁵ In Gen. Dynamics Corp., the district court explained,

The dispositive issue as to plaintiff's claims in this action is the effect of the agreed board order of January 1986. The parties agree that defendant has complied with the order. The dispute arises because plaintiff contends that the order is a departure from the requirements of the Texas SIP. Defendant claims that the order is within the Texas SIP and that TACB's [Texas Air Control Board's] interpretation of the Texas SIP must be given deference by the EPA.

755 F. Supp. at 722.

United States v. DTE Energy Co., Civil Action No. 10-13101, 2011 WL 3706585 (E.D. Mich. Aug. 23, 2011), all in support of its argument that courts should defer to a state's interpretation of its own SIP.

The Government, on the other hand, cites a series of cases supporting its argument that this court should defer to EPA's interpretation of North Carolina's SIP, including Am. Cyanamid Co. v. U.S. Env'tl. Prot. Agency, 810 F.2d 493 (5th Cir. 1987), United States v. Ford Motor Co., 736 F. Supp. 1539 (W.D. Mo. 1990), United States v. S. Ind. Gas & Elec. Co., No. IP99-1692-CM/F, 2002 WL 1760699 (S.D. Ind. July 26, 2002), Safe Air for Everyone v. U.S. Env'tl. Prot. Agency, 488 F.3d 1088, 1097 (9th Cir. 2007). Both sides make persuasive arguments using these cases.

The Fourth Circuit has not directly addressed whether a state's interpretation or EPA's interpretation of a SIP controls. Although not indicative of the court's view on this issue, the Fourth Circuit has previously referred to an EPA-approved SIP as "federal law." In Mirant Potomac River, LLC v. U.S. Env'tl. Prot. Agency, 577 F.3d 223, 227 (4th Cir. 2009), the Fourth Circuit explained that "states have the primary responsibility for assuring that air quality within their borders meets the NAAQS." Id. The court also explained,

however, that once a state's SIP has been approved by EPA "the SIP becomes a binding federal regulation." Id. (citing 42 U.S.C. § 7410 & 7413 & Union Elec. Co. v. U.S. Env'tl. Prot. Agency, 515 F.2d 206, 211 (8th Cir. 1975) ("Upon approval or promulgation of a state implementation plan, the requirements thereof have the force and effect of federal law and may be enforced by the Administrator in federal courts.")); see also W. Va. Chamber of Commerce v. Browner, No. 98-1013, 1998 WL 827315, at *2 (4th Cir. 1998) (unpublished) ("If the EPA determines that a SIP complies with the Clean Air Act, the EPA must approve it and the state regulations become enforceable as federal law."); Allegheny Energy Supply Co., LLC v. Spitzer, Civil Action No. 1:05CV04, 2010 WL 3220355, at *5 (N.D. W. Va. Aug. 12, 2010) (explaining that the plaintiffs sought "to enforce compliance with federal law") (citing Her Majesty The Queen In Right of the Province of Ontario v. The City of Detroit, 874 F.2d 332, 335 (6th Cir. 1989) ("If a state implementation plan ("SIP") is approved by the EPA, its requirements become federal law and are fully enforceable in federal court.")). In North Carolina ex rel. Cooper v. Tennessee Valley Authority, 615 F.3d 291, 299 (4th Cir. 2010), the Fourth Circuit explained,

While states are responsible for promulgating SIPs, they must do so consistently with extensive EPA

regulations governing preparation, adoption by the state, and submission to the EPA, 40 C.F.R. § 51, and all SIPs must be submitted to the EPA for approval before they become final. Once a SIP is approved, however, "its requirements become federal law and are fully enforceable in federal court."

Id. (citations omitted). Although these brief characterizations of EPA-approved SIPs as "federal law" do not bind the Fourth Circuit to accept EPA's interpretation, they contrast with other courts' characterization of EPA-adopted SIPs as "state law" for purposes of determining the controlling interpretation. Compare, e.g., Riverside Labs., 678 F. Supp. at 1357 ("Because claims based on the scope and application of the SIP are essentially ones of state law, the USEPA's right to enforce the SIP in federal court depends upon the Illinois courts' interpretation of the regulation." (citations and internal quotation marks omitted)) with United States v. Congoleum Corp., 635 F. Supp. 174, 177 (E.D. Pa. 1986) ("When the EPA approves the state plan, however, the plan is absorbed into federal law. . . . Consequently, SIP, after it is adopted by the EPA, is federal law.").

Based on the case law and history of the CAA amendments, this court finds that EPA's interpretation of SIP regulations controls when it conflicts with NC DENR's interpretation, particularly when, as here, the state SIP adopts the relevant

federal regulation without additional explanation, modification, or change.

At any rate, as explained above, this court is not persuaded that NC DENR actually made a relevant³⁶ determination of the proper baseline for the thirteen plants at issue. See supra Part III.B.2.a. Nevertheless, to the extent that NC DENR has made a "determination" relevant to this dispute, the EPA's interpretation controls.

c. Deference to EPA's Interpretation

In light of the finding that the evidence of North Carolina's purported interpretation is not persuasive and that the EPA's interpretation is controlling, this court must address Duke's final contention that EPA's determination of a zero baseline is not entitled to deference. (See Duke's Resp. (Doc. 438) at 20-21.)

Once again, the relevant regulations are:

(b)(21)(i) "Actual emissions" means the actual rate of emissions of a pollutant from an emissions unit, as determined in accordance with paragraphs (b)(21)(ii)-(iv) of this section.

(b)(21)(ii) In general, actual emissions as of a particular date shall equal the average rate, in tons

³⁶ To the extent NC DENR did make some type of determination based upon Duke's initial representation that the plants would return online with "minimal expenditures," any such determination is not controlling in light of the actual work subsequently performed under the PMP. See supra Part III.B.2.a.

per year, at which the unit actually emitted the pollutant during a two-year period which precedes the particular date and which is representative of normal source operation. The reviewing authority may allow the use of a different time period upon a determination that it is more representative of normal source operation.

40 C.F.R. § 51.24 (1981).

The parties dispute the consistency and longevity of EPA's interpretation of the baseline calculations. According to the Government, "the rules in this case are EPA-approved regulations that are part of federal air pollution control law, and EPA's interpretation of those rules [and therefore its use of a zero baseline] is entitled to the normal degree of 'controlling' deference." (Pl.'s Reply (Doc. 439) at 10 n.4.) Duke retorts: "In sum, EPA is asking the Court to defer to an EPA policy that was announced well after the relevant SIP and the relevant projects, that was inconsistent with EPA's pre-existing views, and that was subsequently abandoned. This cannot be 'the agency's fair and considered judgment on the matter in question.'" (Duke's Reply (Doc. 440) at 26 (quoting Auer v. Robbins, 519 U.S. 452, 462 (1997).) To resolve the issue, this court will first discuss the appropriate standard for awarding deference to EPA's interpretation, then conduct a review of the

relevant regulations, case law, and EPA determinations prior to this case.

i. Chevron/Auer Deference

In Chevron U.S.A. Inc. v. Natural Resources Defense Council, Inc., 467 U.S. 837 (1984), the Supreme Court explained the role of the courts when reviewing an agency's interpretation of a statute.

When a court reviews an agency's construction of the statute which it administers, it is confronted with two questions. First, always, is the question whether Congress has directly spoken to the precise question at issue. If the intent of Congress is clear, that is the end of the matter; for the court, as well as the agency, must give effect to the unambiguously expressed intent of Congress. If, however, the court determines Congress has not directly addressed the precise question at issue, the court does not simply impose its own construction on the statute, as would be necessary in the absence of an administrative interpretation. Rather, if the statute is silent or ambiguous with respect to the specific issue, the question for the court is whether the agency's answer is based on a permissible construction of the statute.

Id. at 842-43 (footnotes omitted); see Sierra Club v. Administrator, U.S. Env'tl. Prot. Agency, 496 F.3d 1182, 1186 (11th Cir. 2007) (applying Chevron deference to EPA's

interpretation of SIP).³⁷ Furthermore, the Supreme Court in Udall v. Tallman, 380 U.S. 1, 16 (1965) held that “[w]hen the construction of an administrative regulation rather than a statute is in issue, deference is even more clearly in order.” The Court continued,

Since this involves an interpretation of an administrative regulation a court must necessarily look to the administrative construction of the regulation if the meaning of the words used is in doubt. . . . [T]he ultimate criterion is the administrative interpretation, which becomes of controlling weight unless it is plainly erroneous or inconsistent with the regulation.

Id. at 16-17 (quoting, in part, Bowles v. Seminole Rock & Sand Co., 325 U.S. 410, 413-14 (1945)). Additionally, the Supreme Court has explained, “[t]hese principles of deference have

³⁷ The Eleventh Circuit explained,

The fact that the Georgia Rule is a state regulation is not an obstacle to according Chevron deference in this case because the Georgia Rule is part of a state implementation plan (“SIP”) made pursuant to the CAA, and therefore “ha[s] the force and effect of federal law and may be enforced by the [EPA] in federal courts.” Indeed, since the Georgia Rule tracks the language of the CAA so closely, the CAA provides the EPA with the authority to object to state decisions to grant permits, and there is no indication here that the Georgia EPD interprets its own Statewide Compliance Rule differently than the EPA, it is altogether appropriate to grant Chevron deference to the EPA’s amended order.

496 F.3d at 1186 (citations omitted).

particular force . . . [when] [t]he subject under regulation is technical and complex.” Aluminum Co. of Am. v. Cent. Lincoln Peoples’ Util. Dist., 467 U.S. 380, 390 (1984). Here, North Carolina’s SIP incorporated by reference EPA’s federal regulations, see 15A N.C. Admin. Code 2D.0530, which are technical and complex in nature.

In Auer v. Robbins, 519 U.S. 452 (1997),³⁸ the Supreme Court elaborated on the deference due to an agency’s interpretation of a regulation.³⁹ The Court observed,

Petitioners complain that the Secretary’s interpretation comes to us in the form of a legal brief; but that does not, in the circumstances of this

³⁸ Duke claims that Auer deference does not apply because EPA’s zero-baseline is a result of its post hoc rationalization, is self-serving, and is issued contemporaneously with EPA’s enforcement initiative. (Duke’s Resp. (Doc. 438) at 20.) If this court disagrees, however, Duke “preserves the argument that Auer was incorrectly decided and that Courts should not defer to an agency’s informal, after-the-fact interpretation of a regulation.” (Id. at 20-21 and n.10.)

³⁹ The Supreme Court explained,

Because Congress has not “directly spoken to the precise question at issue,” we must sustain the Secretary’s approach so long as it is “based on a permissible construction of the statute.” While respondents’ objections would perhaps support a different application of the . . . test . . . , we cannot conclude that they compel it. . . . [and the Secretary’s view] simply cannot be said to be unreasonable.

Auer, 519 U.S. at 457-58 (citing Chevron, 467 U.S. at 842-43).

case, make it unworthy of deference. The Secretary's position is in no sense a "post hoc rationalizatio[n]" advanced by an agency seeking to defend past agency action against attack. There is simply no reason to suspect that the interpretation does not reflect the agency's fair and considered judgment on the matter in question.

Auer, 519 U.S. at 462 (citing Bowen v. Georgetown Univ. Hosp., 488 U.S. 204, 212 (1988)).

More recently, in Christopher v. Smithkline Beecham Corp., 567 U.S. ___, ___, 132 S. Ct. 2156, 2159 (2012),⁴⁰ the Supreme Court explained that, although the Court's decision in Auer "ordinarily calls for deference to an agency's interpretation of its own ambiguous regulation, even when that interpretation is advanced in a legal brief, this general rule does not apply in all cases." Auer deference does not apply "when there is reason to suspect that the agency's interpretation 'does not reflect the agency's fair and considered judgment on the matter in question[,]" for example, if the interpretation appears to be a "post hoc rationalization" or nothing more than a "convenient

⁴⁰ In Christopher, the Supreme Court addressed "whether pharmaceutical detailers are outside salesmen as the DOL [Department of Labor] has defined that term in its regulations." Id. at 2165. DOL first announced its interpretation that pharmaceutical detailers were not outside salesmen in 2009 and, although its conclusion remained the same, its rationale for that conclusion changed over time. The parties, who agreed that the regulations at issue were valid and entitled to Chevron deference, disagreed "sharply about whether the DOL's interpretation of the regulations is owed deference under Auer v. Robbins." Id.

litigating position,” or if it conflicts with a prior interpretation. Id. at 2166 (citations omitted); see Duke I, 278 F. Supp. 2d at 630 n.8 (finding that two recent decisions cited by EPA did not “evidence a long-standing interpretation” when they were potentially self-serving and were issued following EPA’s “decision in 1999 to initiate a number of enforcement proceedings”). In Christopher, the Supreme Court withheld Auer deference, explaining that one of the “strong reasons” for doing so was the petitioners’ efforts to “invoke the DOL’s interpretation of ambiguous regulations to impose potentially massive liability on respondent for conduct that occurred well before the interpretation was announced.” Id. at 2167. As discussed below, EPA’s zero baseline determination does not appear to be a “post hoc rationalization” adopted to aid EPA in its current litigation efforts, and will be given deference.

ii. Early Regulation Interpretation and Application

A Federal Register entry from 1980 explains EPA’s initial interpretation of the regulation. The comments note that the “[actual emissions] rate as of a particular date equals the average rate in tons per year at which the unit actually emitted the pollutant during a two-year period which precedes the particular date and is representative of normal source

operation." 45 Fed. Reg. 52,676, 52,699 (Aug. 7, 1980). The comments go on to state:

The two-year period of concern should generally be the two years preceding the date as of which increment consumption is being calculated, provided that the two-year period is representative of normal source operation. The reviewing authority has discretion to use another two-year period, if the authority determines that some other period of time is more typical of normal source operation than the two years immediately preceding the date of concern.

45 Fed. Reg. 52,676, 52,718 (Aug. 7, 1980) (emphasis added).

In 1987, three years after Duke's units began entering ECS, EPA issued its Casa Grande Determination. (Pl.'s Br., Ex. 32, Casa Grande Determination ("Casa Grande") (Doc. 435-33).) In Casa Grande, the only published determination as to the relevant regulations at that time, the Director of the Air Management Division explained that the reactivation of that plant (Casa Grande) would be treated as a major new source, and, "even if the reactivated [] plant would not be subject to PSD as a new source, the start-up would also constitute a major modification for PSD purposes." (Id. at 2.) He explained how to calculate the increase in actual emissions by

[C]omparing actual emissions as of a "particular date" - i.e., immediately prior to the physical or operational change in question - with the emissions from the source after the change is made. The regulations provide that actual emissions shall be the rate at which the source actually emitted the pollutant during the two-year period immediately preceding the particular date (the date of the

change), unless EPA determines that a different two-year period is more representative of normal source operation.

(Id. at 9) (emphasis added). According to Director Howekamp, "emissions during the two-year period preceding start-up of the [plant at issue] are zero. I believe that this period is representative of normal source operations, since emissions have been zero during each of the last ten years while the plant has been shut down." (Id.) He further explained that, "given this operational history, I do not believe that emissions during the one year in which the [] plant was functioning [prior to the shutdown] is more representative of normal operations."⁴¹ (Id.)

The regulation itself, the comments in the Federal Register, and the Casa Grande interpretation all suggest that the EPA's original interpretation of the regulation was as follows: (1) the calculation of any increase in actual emissions, determined as of a particular date, is made by comparing actual emissions with the emissions during the two-year period immediately prior to the physical or operational change in question, unless (2) EPA, as the reviewing authority, exercises its discretion and determines that a different two-

⁴¹ Here, although Duke's thirteen units had been functioning for far longer than one year prior to being placed in ECS, they also had been shut down for three to ten years, during which they had emissions rates of zero. See supra pp. 6-11.

year period is more representative of normal source operation. (See Casa Grande (Doc. 435-33) at 9; 45 Fed. Reg. 52,676, 52,718 (Aug. 7, 1980)).⁴²

iii. WEPCo and Later Interpretations

Three years after EPA's Casa Grande Determination, and six years after Duke's units began entering ECS, the Seventh Circuit examined EPA's decision regarding Wisconsin Electric Power Company's ("WEPCo") "five coal-fired steam generating units," whose performance had declined due to "age-related deterioration." Wisconsin Elect. Power Co. v. Reilly, 893 F.2d 901, 905 (7th Cir. 1990). WEPCo had determined that "extensive renovation of the five units and the plant common facilities [was] needed if operation of the plant [was] to be continued"⁴³,

⁴² Casa Grande did not address all circumstances under which a different two-year period might be more representative of normal source operation or what factors would guide its discretion. Nevertheless, this court does not find any authority which substantially alters this interpretation of these two applicable principles in later opinions. Instead, the later opinions merely clarify the circumstances in which the EPA properly exercised its discretion to use a two-year period other than the two years immediately preceding startup. See Part III.B.2.c.iii.

⁴³ "[D]eterioration prevented units 1 and 4 from operating at full capacity, while the potential for steam drum blowout required a reduction in pressure (and output) in units 2 and 3." Wisconsin Electric, 893 F.2d at 906.

id. at 905, and had shut down one of the units completely, id. at 906.

In determining the emissions baseline, the EPA relied upon data from several years prior to the two years immediately preceding the shutdown. Id. at 916. The Seventh Circuit noted that the EPA had "first examined [the immediately-preceding two-years] as the . . . baseline period," but "[b]ecause [the EPA] determined that the discovery of cracks in the rear steam drums led to a more recent 'source curtailment' [which was not representative of normal source operation, it] relied upon the data from earlier years" Id.

The EPA WEPCo Remand Determination (Pl.'s Mot. to Vacate, Ex. 21, June 8, 1990 Letter from William G. Rosenberg (EPA) to John Boston (WEPCo) (Doc. 341-23) at 6-7), cited by Duke (Duke's Br. (Doc. 425) at 59) confirms the court's summary:

The Agency historically has followed a presumption that the most recent 2 years should be used, but has allowed another period where the source demonstrates that recent operations are abnormal. The WEPCo baseline period is an example of this. In this instance, plant utilization was disrupted by physical problems that led to nonroutine physical changes to remedy those problems. Consequently, EPA determined that a period prior to the onset of such problems was representative of normal operations, and as required by its regulations, used this period to establish the baseline. . . . It should be emphasized that, in the WEPCo case, the parties and the court agreed that 1983-84 (prior to discovery of steam drum cracks) should be the baseline years

(WEPCo Remand Determination (Doc. 341-23) at 6-7 (emphasis added) (citations omitted).)

Therefore, this court finds that the WEPCo opinion and EPA Remand Determination are consistent with Casa Grande, and that the EPA's decision to use a different two-year baseline in each case is explainable on the facts. Unlike in Casa Grande, where the plant's 10-year shutdown was not attributed to any disruption by physical complications, the WEPCo plant's "utilization was disrupted by physical problems" that detrimentally affected its output. (Id. at 7.) Importantly, it appears that the WEPCo plant was never intended to be taken completely offline; instead the plan was to "tak[e] the [four operating] units⁴⁴ successively out of service for nine-month periods" while WEPCo made the necessary repairs, throughout

⁴⁴ WEPCo, 893 F.2d at 905-06 ("The possibility of catastrophic failure (steam drum blowout) in unit 5 was so great that WEPCO shut down the unit completely."); see also (Pl.'s Br., Ex. 26, Sept. 9, 1988 Memo from Don R. Clay (EPA) to David A. Kee (WEPCo) (Doc. 435-27) at 9) ("Theoretically, WEPCO could minimize the needed restrictions on its potential to emit following the renovations if it could show that some period other than the most recent two years is 'more representative of normal source operation.' (Obviously, such a showing would be most important with respect to unit 5, because it has been shut down and had zero emissions since 1985)."). (citations omitted).

which time the plant would continue to operate at (presumably) lower capacity. See WEPCo, 893 F.2d at 908; see also (Pl.'s Reply (Doc. 439) at 11 n.6 ("While one of the five units at issue in WEPCo was temporarily shut down, EPA's baseline determination . . . was based on the operation of the entire five-unit plant in aggregate, including four units that were operating.")).) Considering these facts, it appears that, far from signaling a departure from EPA's earlier interpretation of the regulations, the WEPCo determination is merely an example of the EPA exercising its discretion to use of a different baseline period more representative of "normal" operations.

The WEPCo determination is also consistent with subsequent EPA interpretations, which confirm that the purpose of the baseline determination should be to find a baseline characteristic of "normal" operations, and that the two-year period immediately preceding the changes is the default period for that purpose.

For instance, a 1992 EPA memo regarding modifications at Cyprus Northshore Mining Corporation⁴⁵ also addressed the reviewing authority's ability to "allow use of a different [baseline] time period upon a determination that it is more representative of normal source operation."⁴⁶ (Pl.'s Br., Ex. 44 ("Cyprus Memo") (Doc. 435-45) at 4). The memo appears to take a slightly more restrictive view of when the EPA can choose an alternate baseline (Cyprus Memo (Doc. 435-45) at 8 ("In general, EPA has indicated that this provision [allowing an alternate

⁴⁵ Cyprus Northshore Mining Corporation wanted to modify its existing source and to offset increased emissions resulting from that modification by taking credit for the shutdown (ten years before, in 1982) of several furnaces that would be replaced as part of the modification. Since those furnaces had been shut down for approximately ten years, EPA used a zero baseline and explicitly rejected a baseline reflective of the furnaces' actual emissions from 1981 to 1982 or from July 1975 to June 1977. (Pl.'s Br., Ex. 44, Aug. 11, 1992 Memo to David Kee from John Calcagni, EPA (Doc. 435-45) at 2.)

According to EPA, the regulation's netting reductions cannot occur outside of the contemporaneous period, defined by EPA as the period between the "date 5 years before construction on the particular change commences; and [] the date that the increase from the particular change occurs." (Id. at 7.)

⁴⁶ The Government argues that, even if an alternative baseline were permitted, "the rules require the source to first seek a formal determination for an alternate baseline prior to making a change." (Pl.'s Br. (Doc. 435) at 27.) Duke, however, argues that "the applicable regulation did not require Duke to formally request NC DENR make a baseline 'determination.' The regulation merely says that the state reviewing authority can 'determin[e]' a different baseline. Nothing in the regulation requires a utility to 'apply' for a determination, nor does the regulation say anything about what form the determination must take." (Duke's Reply (Doc. 440) at 20 n.13.)

baseline] is to apply to catastrophic occurrences such as strikes and major industrial accidents.")), but doesn't otherwise alter the previous interpretation of the regulation. See id. ("[T]he Administrator's power to use a different baseline period is limited to those circumstances where the source demonstrates that some time period other than the 2 years that precede the change is more representative of normal source operation. . . . For example, in the WEPCo applicability determination, EPA found the fourth and fifth years prior to the proposed renovation project more representative, since the utility's capacity was greatly reduced after that period due to a cracked steam drum and other severe physical problems.")⁴⁷

⁴⁷ Cf. 57 Fed. Reg. 32,314, 32,324 (July 21, 1992) (referring to "EPA's proposed presumption that sources may use, as the baseline, emissions from any 2 consecutive years within the 5 years prior to the proposed change without regard to normal source operations").

With regards to the Cyprus plant, Director Calcagni cautioned that "EPA has declined to consider a stop in operations, in and of itself, to constitute grounds to change the baseline years." (Id. at 9.) He went on to explain, however, that:

EPA cannot approve either a 1981-1982 baseline or the earlier period put forth by Cyprus. Cyprus has not demonstrated that catastrophic occurrences or other extraordinary circumstances disrupted the West Plant for the entire period between the proposed change and the years Cyprus claims are representative of "normal source operations." Indeed, it is admitted that in the last 10 years the source has been idle due to general economic conditions, and the zero baseline appropriately reflects source utilization under these longstanding market conditions. On the other hand, the very fact that Cyprus seeks to throw out the most recent 13 years suggests that the years Cyprus puts forward are not representative of normal operations in any realistic sense. For these reasons, the baseline for the West Plant furnaces should be zero.

Id.

Duke's last PMP units, those at issue in this case, exited ECS and went online in 1994. Five years later, in 1999, an EPA Administrator discussed the proper baseline for long dormant

sources.⁴⁸ See Pl.'s Br., Ex. 35, In re Monroe Elec. Generating Plant, Petition No. 6-99-2 (June 11, 1999) (Doc. 435-36) at 9 (explaining that the "shutdown and subsequent reactivation of a long-dormant facility may trigger PSD review by qualifying as a major modification"). According to the Administrator, although EPA has discretion to set an alternate baseline period, "EPA . . . has applied its discretion narrowly in assigning representative periods other than the two years immediately preceding the physical or operational change." (Id. at 15.) "On more than one occasion, EPA has made clear that in

⁴⁸ Duke argues that "EPA's purported interpretation of the baseline rule in 1999 is clearly irrelevant to the construction of the 1980 rules incorporated into the SIP and approved by EPA in 1982." (Duke's Reply (Doc. 440) at 25-26. But see Pl.'s Reply (Doc. 439) at 11-12 ("Monroe Electric was decided more than a year before the filing of this case, and applied the same interpretation in prior guidance such as Casa Grande.")) Duke also argues that the policy in the Monroe determination regarding the appropriate approach to defining baseline emissions had a "short shelf life," which was abandoned in 2002. (Duke's Reply (Doc. 440) at 25-26.) In response, the Government argues,

Duke is wrong to assert that EPA's interpretation was abandoned in 2002. The new ten-year baseline to which Duke refers changed the presumptive baseline for non-utilities. By contrast, EPA discussed the application of alternate baselines to inoperable power plants in the preamble to the 1992 WEPCo Rule. EPA rejected requests to change the rules to allow shut down plants to use a baseline from a period of prior operation.

(Pl.'s Reply (Doc. 439) at 12.)

calculating the net emissions increase for reactivation of long-dormant sources potentially subject to PSD, the source is considered to have zero emissions as its baseline.” (Id. at 16.) In Monroe, EPA found a zero emissions baseline to be “representative of normal source operations at the Monroe plant, which has had no emissions for the last eleven years.”⁴⁹ (Id. at 26.)

In United States v. Westvaco Corp., Civil Action No. MJG-00-2602, 2010 WL 4068745 (D. Md. Sept. 1, 2010), a Maryland district court also discussed the proper baseline period under the 1980 PSD regulations. See id. at *2 (“As stated in the Regulations, ‘The two-year period of concern should generally be

⁴⁹ In Monroe, Louisiana Power & Light (“LP&L”) had placed three units in extended reserve shutdown (“ERS”) “because of the addition of new electric generating capacity in the area.” (Id. at 5-6; see id. at 5 n.5 (“Extended reserve shutdown is a program implemented . . . to save money by placing units in inactive status and reducing operating staff, maintenance costs, and deferring the cost of repairing units” and “[t]he record further reflects that the [shutdown] units were not in regular operation for several years prior to placing the units in extended reserve shutdown.”).) LP&L prepared the plant for ERS, including using dehumidification equipment to prevent corrosion, and, during ERS, LP&L “conducted some inspection and maintenance activities” and “maintained relevant environmental permits.” (Id. at 6.) The projected cost to restart the units was approximately \$5.3 million. (Id. at 21.)

The EPA Administrator explicitly explained that “[b]ecause restart of the plant more clearly triggers PSD as a major modification involving a change in the method of operation, EPA does not need to make a final conclusion regarding [the company’s] regulatory status under the Reactivation Policy at this time.” (Id. at 20.)

the two years preceding the date as of which increment consumption is being calculated, provided that the two-year period is representative of normal source operation.'" (citing 45 Fed. Reg. 52,676, 52,718 (Aug. 7, 1980))). Westvaco did not challenge the EPA's interpretation of the regulation, but argued that the two years immediately prior to its 1981 expansion project did not represent normal source operations, because in 1975 the plant had become subject to a regulatory emissions cap that forced it to "burn a different fuel," "operate the boilers differently," and "shift power production from one piece of equipment to another piece of equipment." Id. at *2. The court disagreed:

Certainly, it is appropriate to use a pre-change baseline period earlier than the two years immediately prior to a change when some circumstance temporarily reduces the rate of emissions. Such circumstances would include, for example, a strike, major industrial accident, or other catastrophic occurrence that reduced capacity or, perhaps, some catastrophe that required a plant temporarily to increase production of a needed product to an extraordinary degree.

Id. at *3 (emphasis added) (footnote omitted). The court observed that, even with the emissions cap in place, the Westvaco plant did not suffer a "substantial change" in "overall production" and continued to operate relatively normally, unlike the power plant at issue in WEPCo. Id. at *2 ("In essence, the method of post-cap operation became normal source operations

that continued for some six years until the commencement of the [expansion program] and would have continued for the indefinite future.”). The court further found that, in the absence of some “catastrophe” which actually disrupted the Westvaco plant, it was “far more sound for the Court to find[] that . . . ‘normal source operations’ for the [Westvaco plant] was . . . the mode of operations conducted [in the two-year period immediately prior to the proposed modifications].” Id. at *3.

This review of relevant cases and proceedings, beginning with the regulation itself and continuing from Casa Grande to the present, confirm that EPA has consistently used a baseline period of two years prior to a change when calculating emissions increases. Specifically, EPA has reliably interpreted the regulations to provide that (1) the calculation of any increase in actual emissions (determined as of a particular date) is made by comparing actual emissions with the emissions during the two-year period immediately prior to the physical or operational change in question, unless (2) EPA determines that a different two-year period is more representative of normal source operation. However, (3) the EPA has generally exercised its discretion to use another two-year period only in circumstances of “nonroutine physical changes” or “some catastrophe” that

drastically altered the unit's operations. See, e.g., Cyprus Memo (Doc. 435-45) at 8; Westvaco, 2010 WL 4068745, at *3.

iv. Conclusion

Based on the foregoing discussion, this court concludes that EPA's interpretation of the regulations "reflect[s] the agency's fair and considered judgment on the matter" Christopher, 132 S. Ct. at 2166. The interpretation has been consistent from Casa Grande to the present, and does not appear to be a "post hoc rationalization" or a "convenient litigating position" adopted just for this case. Id. Despite Duke's arguments to the contrary (see supra note 38), EPA's interpretation should receive Auer deference in this case.⁵⁰

With respect to the motions in limine, this court therefore finds that PROMOD expert witness testimony should not be excluded and that both EPA's designation and the Government experts' use of a zero baseline is appropriate based on the facts submitted at this stage of the proceedings. Duke's motions in limine will be denied to the extent they relate to the PROMOD expert witness testimony.

⁵⁰ However, as noted in footnote 38, Duke has objected and properly preserved its argument that Auer was incorrectly decided. This court, having found Auer applicable, is bound to apply that holding.

IV. DUKE'S MOTION FOR SUMMARY JUDGMENT

Duke has moved for summary judgment (Doc. 432). That motion is dependent upon this court's ruling on the motions in limine (Docs. 421, 422, 423, 424) which deal with expert testimony and methodologies used to calculate increased admissions. As Duke explains:

The government proffers two methodologies in an attempt to satisfy its burden under the "actual-to-projected-actual test." Those methodologies are inadmissible, for the reasons stated in the in limine motion accompanying this motion . . . The government has put forward no other evidence to demonstrate that the PMP projects at issue reasonably should have been expected to cause a significant net emissions increase from the projects at issue.

(Duke's Br. (Doc. 433) at 5.)

Thus, this court finds, in light of its rulings on the motions in limine, that Duke's motion for summary judgment should be denied.

Duke also argues, in the alternative, that because "the GADS methodology projects no significant emissions increase for six PMP projects" (id. at 12), summary judgment should be granted as to those six PMP projects. This court disagrees and finds that the GADS-based projections do not require summary judgment on behalf of Duke in light of the findings set forth in this opinion.

Duke's Motion for Summary Judgment (Doc. 432) will be denied.

V. CONCLUSION

For the reasons set forth herein, **IT IS ORDERED** that Duke's Motions in Limine (Docs. 421, 422, 423, 424) are **GRANTED IN PART** with regards to Plaintiff's GADS expert witness testimony and with respect to Dr. Sahu's testimony as to an "actual-to-potential" test. The motions in limine are **DENIED** with regards to Plaintiff's PROMOD expert witness testimony.

IT IS FURTHER ORDERED that Duke's Motion for Summary Judgment (Doc. 432) is **DENIED**. Plaintiff's Motion for Summary Judgment (Doc. 434) remains under advisement and will be addressed in a forthcoming opinion.

This the 6th day of November, 2013.


United States District Judge